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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,866	05/29/2001	Brian Sorrentino	02427/1203347-US2	4688

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EXAMINER	
BELYAVSKYI, MICHAIL A	
ART UNIT	PAPER NUMBER
1644	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/866,866	SORRENTINO ET AL.	
	Examiner	Art Unit	
	Michail A. Belyavskyi	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16,22-24 and 29-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16,22-24 and 29-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

RESPONSE TO APPLICANT'S AMENDMENT

1. Applicant's amendment, filed 03/30/07 is acknowledged.

Claims 16, 22-24 and 29-34 are pending.

Claims 16, 22-24 and 29-34 drawn to an isolated antibody that binds to an extracellular portion of BCRP are under consideration in the instant application.

In view of the amendment, filed 03/30/07 the following rejections remain:

2. The following is a quotation of the second paragraph of 35 U.S.C. 112.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16, 22-24 and 29-34 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the same reasons set forth in the previous Office Action, mailed on 11/07/06.

4. Claim 16, 22-24 and 29-34 are indefinite and ambiguous in the recitation of BCRP protein in the second line and huBCRP or mBCRP. Recitation of a protein without providing SEQ ID NO for the protein is indefinite and ambiguous because different laboratories may have the same name for a different proteins.

Applicant's arguments, filed 03/30/07 have been fully considered, but have not been found convincing.

Applicant asserts that the term "BCRP refers to a genus of proteins from individual mammalian species. SEQ ID NOs are provided for individual species-specific BCRP sequences.

Contrary to Applicant's assertion, as has been stated supra, recitation of a protein without providing SEQ ID NO for the protein is indefinite and ambiguous. Applicant should provided SEQ ID NOs for specific BCRP as disclosed on pages 8 and 15.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6 . Claims 16, 22-24 and 29-34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the same reasons set forth in the previous Office Action, mailed on 11/07/06. **This is a New Matter rejection.**

" wherein the antibody binds to living MCF-7 or 3T3 cells expressing BCRP on their surface wherein the antibody does not bind to living MCF-7 cells that do not express BCRP on their surface and wherein the antibody does not bind to denaturated BCRP" claimed in claim 16 represent(s) a departure from the specification and the claims as originally filed.

The specification and the claims as originally field only support antibody that recognized an extracellular portion of BCRP, wherein said extracellular portion of the BCRP is in its natural conformation.

Applicant's arguments, filed 03/30/07 have been fully considered, but have not been found convincing.

Applicant asserts that the Specification on pages 39, 40, 22 and 24 provides a support for amended claims.

Contrary to Applicant's assertion, the passages pointed by Applicant do not provide a clear support for " wherein the antibody binds to living MCF-7 or 3T3 cells expressing BCRP on their surface wherein the antibody does not bind to living MCF-7 cells that do not express BCRP on their surface and wherein the antibody does not bind to denaturated BCRP" claimed in claim 16. For example, on pages 39 and 40, the Specification disclosed generation of a specific antibodies that can detect endogenously expressed hu BCRP. On pages 22 and 24 the Specification disclosed that one skill in the art would know how to generate antibodies which would recognized a specific epitopes of BCRP or to generate antibodies that can be used to identify native stem cells that express the huBCRP on their surface .

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 37(c) of this title before the invention thereof by the applicant for patent.

8. Claims 16, 22 and 31-34 stand rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,313,277 (IDS) for the same reasons set forth in the previous Office Action, mailed on 11/07/06.

Applicant's arguments, filed 03/30/07 have been fully considered, but have not been found convincing.

Applicant asserts that US Patent '277 only disclosed that antibody capable of binding to BCRP can be prepared, but that such prophetic disclosure does not support the actual generation of any antibody.

Contrary to Applicant's position, as has been stated in the previous Office Action, US Patent' 277 teaches an isolated polyclonal and monoclonal antibody that binds to BCRP (see entire document, column 4, lines 50-60 in particular). Moreover, it is noted that the instant specification on overlapping pages 22-24 explicitly disclosed that at the time the invention was made one skill in the art, would know how to generate antibody which would recognized a specific epitopes of BCRP.

Although the reference is silent about the antibody binding to an extracellular portion of BCRP or does not binds to denaturated BCRP, said functional limitation would be inherent properties of the referenced antibody, because the referenced antibody was obtained against the same antigen as claimed. Since the office does not have a laboratory to test the reference antibodies, it is applicant's burden to show that the reference antibodies does not binds to denaturated BCRP as recited in the claims. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Marosi*, 218 USPQ 289, 292-293 (Fed. Cir. 1983); *In re Fitzgerald et al.*, 205 USPQ 594 (CCPA 1980).

It is noted that the instant claims 31-34 recited a process of producing a monoclonal antibody that is different from the referenced monoclonal antibody that binds to BCRP.
However, the instant claims are drawn to a product (antibody) and the patentability of the product does not depend on its method of production. In re Thrope,227 USPQ 964,966 (Fed. Cir. 1985). See MPEP 2113.

This position is further supported by the recent decision of the court who states "IF APPLICANT HAS DISCLOSED FULLY CHARACTERIZED ANTIGEN, EITHER BY STRUCTURE, FORMULA, CHEMICAL NAME, OR PHYSICAL PROPERTIES, OR BY DEPOSITING PROTEIN IN PUBLIC DEPOSITORY, THEN APPLICANT CAN CLAIM

ANIBODY BY ITS BINDING AFFINITY TO THAT DESCRIBED ANTIGEN" Noelle v. Lederman, 355 F.3d 1343 (Fed. Cir. 2004). Here, US Patent '277 disclosed a fully characterized BCRP antigen by its structure.

The reference teaching anticipates the claimed invention.

9 . Claims 16, 22-24 and 29-34 stand rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,485,933 for the same reasons set forth in the previous Office Action, mailed on 11/07/06.

Applicant's arguments, filed 03/30/07 have been fully considered, but have not been found convincing.

Applicant asserts that US Patent '933 only disclosed assay , such as ELISA, RIA or FACS that could be employed to detect the expression of BCRP. US Patent' 933 does not disclosed any antibody.

Contrary to Applicant's assertion, it is Examiner position that US Patent' 933 teaches an isolated polyclonal and monoclonal antibody that binds to BCRP (see entire document, Abstract and column 16, lines 15-30 in particular). US Patent' 933 further teaches that said antibody is chimeric or humanized or attached to detectable label (see overlapping columns 18 and 19). Moreover, the Examiner submits that Applicant's acknowledgment that US Patent' US Patent' 933 teaches FACS assay to detect the expression of BCRP, support the Examiner position. It would be immediately apparent to one skill in the art that antibody used for FACS analysis to detect the expression of BCRP binds to an extracellular portion of BCRP that is expressed on the cell surface.

Although the reference is silent about the antibody does not binds to denaturated BCRP, said functional limitation would be inherent properties of the referenced antibody, because the referenced antibody was obtained against the same antigen as claimed. Since the office does not have a laboratory to test the reference antibodies, it is applicant's burden to show that the reference antibodies does not binds to denaturated BCRP as recited in the claims. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Marosi*, 218 USPQ 289, 292-293 (Fed. Cir. 1983); *In re Fitzgerald et al.*, 205 USPQ 594 (CCPA 1980).

It is noted that the instant claims 31-34 recited a process of producing a monoclonal antibody that is different from the referenced monoclonal antibody that binds to BCRP.
However, the instant claims are drawn to a product (antibody) and the patentability of the product does not depend on its method of production. In re Thrope,227 USPQ 964,966 (Fed. Cir. 1985). See MPEP 2113.

This position is further supported by the recent decision of the court who states "IF APPLICANT HAS DISCLOSED FULLY CHARACTERIZED ANTIGEN, EITHER BY STRUCTURE, FORMULA, CHEMICAL NAME, OR PHYSICAL PROPERTIES, OR BY DEPOSITING PROTEIN IN PUBLIC DEPOSITORY, THEN APPLICANT CAN CLAIM ANIBODY BY ITS BINDING AFFINITY TO THAT DESCRIBED ANTIGEN" Noelle v. Lederman, 355 F.3d 1343 (Fed. Cir. 2004). Here, US Patent '933 disclosed a fully characterized BCRP antigen by its structure.

The reference teaching anticipates the claimed invention.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 16, 23, 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,313,277 in view of Owens (1994) for the same reasons set forth in the previous Office Action, mailed on 11/07/06.

Applicant's arguments, filed 03/30/07 have been fully considered, but have not been found convincing.

Applicant asserts that since US Patent '277 is not a prior art reference for 102 (e) rejection it can not be used in 103 rejection.

Contrary to Applicant's assertion, as has been stated supra, it is the Examiner position that US Patent '277 is a prior art reference and thus can be used in 103 rejection.

The claimed invention differs from the reference teaching in that US Patent '277 does not explicitly teaches an isolated antibody, wherein said antibody is chimeric, as claimed in claim 23 or humanized as claimed in claim 24 or attached to a detectable label, as claimed in claim 29.

Owens *et al.,* teach the modification of murine antibodies such as a chimeric antibody, a single chain antibody, or a humanized antibody antibodies monoclonal antibody technology, chimeric antibody or attaching antibody to a detectable label. Owens *et al* further teach humanized antibodies use in therapy of human diseases or disorders, since the human or humanized antibodies are much less likely to induce an immune response. Also, antibody fragments are the reagents of choice for some clinical applications, and the chimeric antibodies offers the ability to mediate antigen-dependent cytotoxicity and complement -dependent cytotoxcity (see the entire document).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to produce the monoclonal antibody taught by US Patent ,277 as chimeric, humanized antibody, taught by the Owens *et al.*

One of ordinary skill in the art at the time the invention was made would have been motivated to do so because the humanized antibodies are much less likely to induce an immune response and because the antibody fragments are the reagents of choice for some clinical applications and the chimaeric antibodies offers the ability to mediate antigen-dependent cytotoxicity and complement-dependent cytotoxcity as taught by Owens *et al.*

From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expection of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

12. Claims 16 and 30 stand rejected under 35 U.S.C. 103(a) as being obvious over US Patent 6,313,277 or US Patent 6,485,933 each in view of in view of U.S. Patent No. 4,281,061 in view of Owens (1994) for the same reasons set forth in the previous Office Action, mailed on 11/07/06.

Applicant's arguments, filed 03/30/07 have been fully considered, but have not been found convincing.

Applicant asserts that since US Patent '277 and US Patent '933 are not prior art references in 102 (e) rejection they can not be used in 103 rejection.

Contrary to Applicant's assertion, as has been stated supra, it is the Examiner position that US Patent '277 and US Patent' 933 are both prior art references and thus can be used in 103 rejection.

US Patent 6,313,277 or US Patent 6,485,933 does not teach a kit comprising in suitable container the antibody that binds to BCRP.

US Paten '061 teaches that reagents of the pharmaceutical compositions can be provided as kits as a matter of convenience , optimization and economy of the users (see col 22, line 62 - col 23, line 4 in particular).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teaching of US Paten '061 to those of US Patent '933 or US Patent '277 to obtain a claimed kit comprising the antibody that binds to BCRP.

One of ordinary skill in the art at the time the invention was made would have been motivated to do so, because assemble the reagents in a kit format a matter of convenience , optimization and economy of the users as taught by US Paten '061 and the antibody that binds to BCRP as taught by US Patent 6,313,277 or US Patent 6,485,933 can be in a pack or a kit for convenience and economy.

From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

13. No claim is allowed.

14. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michail Belyavskyi whose telephone number is 571/ 272-0840 The examiner can normally be reached Monday through Friday from 9:00 AM to 5:30 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on 571/ 272-0841 .

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MICHAIL BELYAVSKYI, PH.D.
PATENT EXAMINER

5/10/07